CASE REPORT

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Sphenoid Sinus Aspergilloma: A Rare Case Report

Sfenoid Sinüs Aspergilloması: Nadir Bir Vaka Raporu

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ABSTRACT

Objectives: Sphenoid sinusitis is uncommon, and aspergillus infections represent a minority of these cases. Symptoms such as nasal congestion, postnasal drip and headache are similar to those experienced with chronic rhino sinusitis. Computed tomography and magnetic resonance imaging can help in diagnosing fungal infections of the paranasal sinuses.

Case report: A 57-year-old female patient applied to Marmara University, Faculty of Dentistry, Department of Oral and Dentomaxillofacial Radiology with the complaint of mobility in the tooth number 27. During the assessment of the teeth in the maxillary posterior region in the CBCT, a pathology was detected that full-filled the right lateral pterygoid process, anterior clinoid process and right sphenoid sinus. The patient was directed to the otorhinolaryngology clinic for further assessment of the lesion. Following the incisional biopsy, the pathology report indicated that the lesion was consistent with Aspergillus.

Conclusion: Early diagnosis of lesions which develop asymptomatic but may cause damage to surrounding structures with late diagnosis and postponement of treatment such as sphenoid sinus aspergilloma is of great importance. For this reason, when interpreting radiological images, it is always necessary to make a comprehensive evaluation instead of focusing on the main complaint.

Keywords: *Aspergillosis, Cone-Beam Computed Tomography, Sphenoid Sinus.*

ÖZET

Amaç: Sfenoid sinüslerde sinüzit nadir görülmekte olup, aspergillus enfeksiyonları bu vakaların küçük bir kısmını oluşturmaktadır. Burun tıkanıklığı, geniz akıntısı ve baş ağrısı gibi semptomlar, kronik rinosinüzit belirtileriyle benzerlik göstermektedir. Bilgisayarlı tomografi ve manyetik rezonans görüntüleme, paranazal sinüslerdeki mantar enfeksiyonlarının tanısında önemli bir rol oynamaktadır.

Olgu sunumu: 27 nolu dişinde mobilite şikayetiyle Marmara Üniversitesi Diş Hekimliği Fakültesi Ağız, Diş ve Çene Radyolojisi Anabilim Dalı'na başvuran 57 yaşındaki kadın hastanın, konik ışınlı bilgisayarlı tomografi ile yapılan değerlendirmesinde, maksiller posterior bölgedeki dişleri incelenirken sağ lateral pterygoid proçes, anterior klinoid proçes ve sağ sfenoid sinüsü tamamen dolduran bir patoloji tespit edilmiştir. Lezyonun ayrıntılı değerlendirilmesi amacıyla hasta kulak, burun ve boğaz kliniğine yönlendirilmiştir. Alınan insizyonel biyopsiyi takiben, patoloji raporu lezyonun Aspergillus ile uyumlu olduğunu ortaya koymuştur.

Sonuç: Sphenoid sinüs aspergilloması gibi asemptomatik gelişen ancak geç teşhisi ve tedavinin ertelenmesiyle çevre yapılarda tahribata neden olabilecek lezyonların erken teşhisi büyük önem taşımaktadır. Bu nedenle radyolojik görüntülerin yorumlanması esnasında esas şikayete yoğunlaşmak yerine her zaman genel bir değerlendirme yapılması gereklidir.

Anahtar kelimeler: *Aspergilloma, Konik ışınlı bilgisayarlı tomografi, Sfenoid sinüs.*

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Introduction

Fungal sinusitis of the paranasal sinuses is rarely seen in immunocompetent healthy individuals.[1] The spectrum is wide and can be seen in three ways: non-invasive, invasive & indolent and fulminant.[2,3] The majority of cases of invasive fungal sinusitis occur in immunocompromised hosts and this type is more destructive.[4]

Among fungal sinus infections, one of the most commonly encountered pathogens is aspergillosis. Aspergillosis most commonly affects the maxillary sinus and less frequently the ethmoid and frontal sinuses. [1,5,6] Aspergillosis microbe-induced isolated sphenoid sinusitis cases are exceedingly common and they are more challenging to diagnose because, as nearly all prior cases have shown, unspecific history and physical exam results are made the condition difficult to diagnose.[1,7-10] Nonspecific symptoms such as nasal congestion, purulent rhinorrhoea, postnasal drip, facial swelling, and headache are comparable to the symptoms of chronic rhino sinusitis. When fungal sinusitis occurs, these symptoms are typically seen unilaterally.[11] These comparable symptoms could cause a delay in diagnosis and, this situation may result in serious and life-threatening complications due to the close proximity of the sphenoid sinus to important structures, like the optic nerve, pituitary gland, internal carotid artery, cavernous sinus, 3.-4.-6. cranial nerves, ophthalmic and maxillary branches of the 5th cranial nerve, the pterygoid canal & nerve, brain and meninges that are vulnerable to injury.[1,2,7,10,12-14]

While aspergillosis seen in the paranasal sinuses presents with mild symptoms in people without immune system disorders, it can be a cause of high morbidity and mortality in people with immune disorders.[7,10]

Aspergillus species are common causes of invasive fungal infections in immunocompromised patients; they are also associated with allergic bronchopulmonary diseases, mycotic keratitis, otomycosis, and nasal sinusitis.[15]

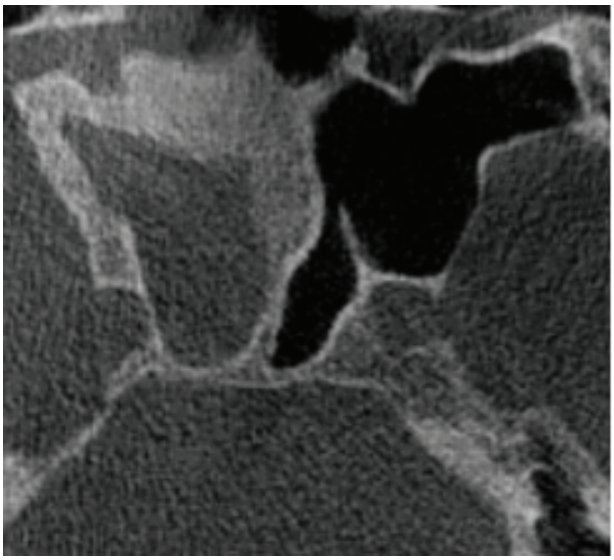
A clinical examination by itself is rarely conclusive, and a high index of suspicion is required for the diagnosis. The diagnosis of fungal infections of the paranasal sinuses can be aided by imaging diagnostics, particularly computed tomography and magnetic resonance imaging.[16] For a conclusive diagnosis, suspected tissues must be cultured and histologically examined.[11,17-19] Surgical debridement and systemic antifungal therapy are the cornerstones of treatment for invasive fungal sinusitis. Surgery alone or in conjunction with systemic steroid therapy are the two treatment options for non-invasive fungal sinusitis.[4,11,17]

In this article, a case of sphenoid sinus aspergillosis that was incidentally detected in the cone beam computed tomography (CBCT) image of a patient who received CBCT for dental reasons is presented.

Case Report

A 57-year-old female patient with a history of hypertension and hypothyroidism applied to Marmara University, Faculty of Dentistry, Department of Oral and Dentomaxillofacial Radiology with the complaint of mobility in her left maxillary posterior teeth. After clinical examination and radiological evaluation with an orthopantomogram (OPTG), extraction of tooth numbered 27 with the endo-perio lesion was decided. And CBCT, a three-dimensional imaging technique, was requested for the patient's further implant treatment plan. During the assessment of the teeth in the maxillary posterior region in the CBCT, a pathology was detected that completely filled the right lateral pterygoid process, anterior clinoid process and right sphenoid sinus, causing hyperosteosis similar to the ground glass appearance in the peripheral bone structures (Figure 1).

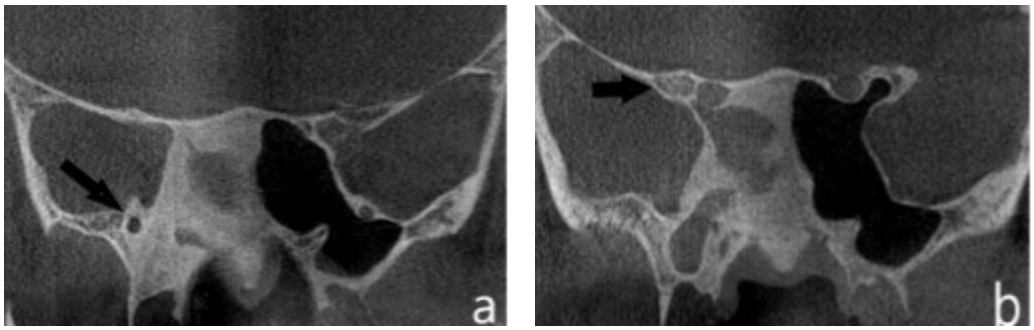
Figure 1. In the axial section of the CBCT image ground glass appearance in the peripheral bone structure of the right sphenoid sinus



In addition, the above-stated appearance is accompanied by an area of lower density than the hyperosteosis in the mentioned bone structure, extending into and filling the right posterior ethmoid sinus, which causes a defect in the bone structure in the section corresponding to the sphenoethmoidal recess in the anterior (Figure 2). On the other hand, it was observed that the hyperosteotic structure encompass the foramen infraorbitale and foramen opticum (Figure 3). An area consistent with mucosal thickening was also observed in the left sphenoid sinus.

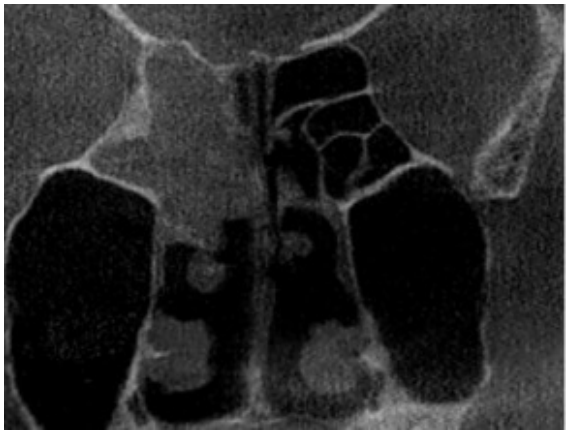
Figure 2. In the sagittal section of the CBCT image area of lower density than the hyperosteosis extending into and filling the right posterior ethmoid sinus

Figure 3. In the coronal section of the CBCT images hyperosteotic structure encompass the foramen infraorbitale (a) and foramen opticum (b)



The osteomeatal unit was observed to be open on the left and obliterated on the right (Figure 4). The nasal septum was deviated to the left, hypertrophy was observed in the turbinates on the left, and a slight narrowing was observed in the passage.

Figure 4. In the coronal section of the CBCT images obliterated osteomeatal unit on the right side



In line with the results obtained, the medical history of the patient was investigated deeply. Then, it was determined that the patient had complaints of postnasal drip, chronic headache and anosmia, which had been going on since her youth. It was discovered that she had a severe pneumonia in her youth. In light of these findings, the patient was referred to the otorhinolaryngology clinic for detailed evaluation of the lesion. In a private clinic, following a biopsy taken from the affected area, the pathology report indicated that the lesion was consistent with Aspergillus. Antifungal treatment was planned for the lesion involving a very large bone structure, and minimal curettage in the sinus was carried out to prevent harm to the surrounding structures.

Conclusion

During the interpretation of radiological images in dentistry, surrounding anatomical structures and neighbourhood should not be ignored. The dentist, who often focuses on the side of the image that the patient complains about, misses other asymptomatic pathologies. By diagnosing the lesion that causes damage to the surrounding tissues and directing it to treatment, greater damage to the nerve and vascular structures is prevented.

Detection of this lesion, which cannot be seen on OPTG, during the evaluation of cone beam computed tomography images is very important for this case, which is very difficult to diagnose, is rarely seen in the literature, and whose symptoms are confused with other diseases.

Conflict of interest

None of the authors of this article has any relationship, connection or financial interest in the subject matter or material discussed in the article.

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